

KONRAD RAYNES & VICTOR, LLP

315 S. Beverly Drive, Suite 210
Beverly Hills, California 90212

Telephone: (310) 556-7983
Facsimile: (310) 556-7984

FAX COVER SHEET

**PLEASE DELIVER THIS FACSIMILE
TO EXAMINER SUSANNA M. MEINECKE DIAZ**

TO: Commissioner for Patents
Attn: Examiner Susanna M. Meinecke Diaz
Group Art Unit 3623
Patent Examining Corps
Facsimile Center
Washington, D.C. 20231

FROM: Janaki K. Davda

OUR REF: 0036.0044
TELEPHONE: 310-556-7983

Total pages, including cover letter: 46

PTO FAX NUMBER 1-703-308-7953

If you do NOT receive all of the pages, please telephone us at 310/556-7983, or fax us at 310/556-7984.

Description of Documents Transmitted: PTO/SB/21 TRANSMITTAL FORM;
PTO/SB/17 FEE TRANSMITTAL(+ copy of same); APPEAL BRIEF

Applicant: L.C. Lahey et al.
Serial No.: 09/398,378
Filed: September 17, 1999
Group Art Unit: 3623
Docket No.: BO999030

I hereby certify that this paper is being transmitted by facsimile to the U.S. Patent and Trademark Office on
November 8, 2004

By: Janaki K. Davda
Name: Janaki K. Davda

PTO/SB/21
0036.0044

TRANSMITTAL FORM	Application Number	09/398,378
<i>(To be used for all correspondence after initial filing)</i>	Filing Date	September 17, 1999
	Inventor	L.C. Lahey et al.
	Group Art Unit	3623
	Examiner Name	Susanna M. Meinecke Diaz
Total Number of Pages in this Submission: 43	Attorney Docket Number	BO999030


ENCLOSURES (check all that apply)

<input checked="" type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached <input type="checkbox"/> Amendment/Reply <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits /Declarations <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement; ___ references <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Response to Missing Parts/Incomplete Application <input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Assignment Papers (for an application) <input type="checkbox"/> Formal Drawings: ___ sheets <input type="checkbox"/> Licensing-related papers <input type="checkbox"/> Petition: <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation, and/or Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) ___	<input type="checkbox"/> After Allowance Communication to Group <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input checked="" type="checkbox"/> Appeal Communication to Group (<i>Appeal Notice, Brief, Reply Brief</i>) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input type="checkbox"/> Certificate of Correction <input type="checkbox"/> Fee Address Indication Form <input type="checkbox"/> Other Enclosure(s) (<i>please identify below</i>)
---	---	--

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual Name:	Janaki K. Davda, Registration No. 40,684
Signature:	<i>Janaki K. Davda</i>
Date:	November 8, 2004
KONRAD RAYNES & VICTOR, LLP 315 South Beverly Drive, Suite 210 Beverly Hills, California 90212 (310) 556-7983	
<input checked="" type="checkbox"/> The Commissioner is authorized to charge any deficiency of fees, or credit any overpayment, to Deposit Account No. 50-0563	

CERTIFICATE OF MAILING OR TRANSMISSION

I hereby certify that this Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to Commissioner for Patents, Alexandria, VA 22313-1450, or being facsimile transmitted to the USPTO, on the date indicated below.		
Typed or Printed name:	Janaki K. Davda	 24033 PATENT TRADEMARK OFFICE
Signature:	<i>Janaki K. Davda</i>	
Date:	November 8, 2004	

PTO/SB/17
0038.0044

FEE TRANSMITTAL	Application Number	09/398,378
for FY 2004	Filing Date	September 17, 1999
	Inventor	L.C. Lahey et al.
	Group Art Unit	3623
	Examiner Name	Susanna M. Meinecke Diaz
Total Amount of Payment: \$340.00		Attorney Docket Number BO999030

METHOD OF PAYMENT (check one)

1. ☒ The Commissioner is hereby authorized to charge the indicated fees and/or credit any overpayments to Deposit Account Number: 50-0563
☐ Charge any additional fee required under 37 CFR 1.16 and 1.17
☒ Charge any deficiency or credit any overpayment

2. ☐ Payment enclosed:

- ☐ Chk. No. _____ for \$ _____
☐ Chk. No. _____ for \$40
☐ Credit Card Approval for _____

FEE CALCULATION

1. BASIC FILING FEE

Utility Filing Fee:
 Large Entity Fee Code 101 \$790.00

Fee Submitted: \$ _____

2. EXTRA CLAIMS FEES

Total Claims ____ - 20* x \$18= \$ _____
 Independent

Claims ____ - 3* x \$88= \$ _____

Multiple Dependent \$300 \$ _____

Subtotal \$ _____

*(or number previously paid for)


FEE CALCULATION (continued)

3. ADDITIONAL FEES (large entity)

- ☐ Surcharge- late filing fee or oath \$130
☐ Surcharge- late provisional filing fee or cover sheet \$50
☐ Non-English specification \$130
☐ International type search report \$40
☐ Requesting publication of SIR prior to action \$920
☐ Requesting publication of SIR after action \$1840
☐ Extension for reply- first month \$110
☐ Extension for reply- second month \$430
☐ Extension for reply- third month \$980
☐ Extension for reply- fourth month \$1530
☐ Extension for reply- fifth month \$2080
☐ Notice of Appeal \$340
☒ Brief in Support of Appeal \$340
☐ Request for Oral Hearing \$300
☐ Utility issue fee \$1370
☐ Petition to revive (unavoidable) \$110
☐ Petition to revive (unintentional) \$1370
☐ Petitions to the Commissioner \$130
☐ Petitions related to provisional applications \$50
☐ Submission of Information Disclosure Statement \$180
☐ Recordation of Assignment \$40
☐ Submission after final (37 CFR 1.129(a)) \$790
☐ Request for Continued Examination (RCE) \$790
☐ Other:

SUBTOTAL \$ 340.00

Submitted by:

Firm or Individual Name:	Janaki K. Davda; Registration No. 40,684	 24033 PATENT TRADEMARK OFFICE
Signature:	<i>Janaki K. Davda</i>	
Date: November 8, 2004	Telephone: (310) 553-7973	

PTO/SB/17
0036.0044

FEE TRANSMITTAL	Application Number	09/398,378
for FY 2004	Filing Date	September 17, 1999
COPY	Inventor	L.C. Lahey et al.
	Group Art Unit	3623
	Examiner Name	Susanna M. Meinecke Diaz
Total Amount of Payment: \$340.00	Attorney Docket Number	BO999030

METHOD OF PAYMENT (check one)

1. ☒ The Commissioner is hereby authorized to charge the indicated fees and/or credit any overpayments to Deposit Account Number: 50-0563
- ☐ Charge any additional fee required under 37 CFR 1.16 and 1.17
- ☒ Charge any deficiency or credit any overpayment

2. ☐ Payment enclosed:☐ Ck. No. _____ for \$ _____☐ Ck. No. _____ for \$40☐ Credit Card Approval for _____**FEE CALCULATION**

1. BASIC FILING FEE

Utility Filing Fee:

Large Entity Fee Code 101 \$790.00

Fee Submitted: \$ _____

2. EXTRA CLAIMS FEES

Total Claims ____ - 20* x \$18= \$ _____

Independent

Claims ____ - 3* x \$88= \$ _____

Multiple Dependent \$300 \$ _____

Subtotal \$ _____

*(or number previously paid for)

FEE CALCULATION (continued)

3. ADDITIONAL FEES (large entity)


☐ Surcharge- late filing fee or oath \$130☐ Surcharge- late provisional filing fee or cover sheet \$50☐ Non-English specification \$130☐ International type search report \$40☐ Requesting publication of SIR prior to action \$920☐ Requesting publication of SIR after action \$1840☐ Extension for reply- first month \$110☐ Extension for reply- second month \$430☐ Extension for reply- third month \$980☐ Extension for reply- fourth month \$1530☐ Extension for reply- fifth month \$2080☐ Notice of Appeal \$340☒ Brief in Support of Appeal \$340☐ Request for Oral Hearing \$300☐ Utility issue fee \$1370☐ Petition to revive (unavoidable) \$110☐ Petition to revive (unintentional) \$1370☐ Petitions to the Commissioner \$130☐ Petitions related to provisional applications \$50☐ Submission of Information Disclosure

Statement \$180

☐ Recordation of Assignment \$40☐ Submission after final (37 CFR 1.129(a)) \$790☐ Request for Continued Examination (RCE) \$790☐ Other:

SUBTOTAL \$ 340.00

Submitted by:

Firm or Individual Name:	Janaki K. Davda; Registration No. 40,684	 24033 PATENT TRADEMARK OFFICE
Signature:	<i>Janaki K. Davda</i>	
Date: November 8, 2004	Telephone: (310) 553-7973	

In the United States Patent and Trademark Office

Board of Patent Appeals and Interferences

Appeal Brief

In re the Application of:

Leonard Corning Lahey, Robert Curt Nielsen,
Dwight Ross Palmer, and Adam Alvin Swartz

Serial No. 09/398,378

Filed: September 17, 1999

Attorney Docket No. BO999030

METHOD, SYSTEM, AND PROGRAM FOR
PROCESSING A JOB IN AN
EVENT DRIVEN WORKFLOW ENVIRONMENT

Submitted by:

Konrad, Raynes & Victor LLP
315 So. Beverly Dr., Ste. 210
Beverly Hills CA 90212
(310) 556-7983
(310) 556-7984 (fax)

TABLE OF CONTENTS

	page
I. <u>Real Party in Interest</u>	1
II. <u>Related Appeals, Interferences, and Judicial Proceedings</u>	1
III. <u>Status of the Claims</u>	1
IV. <u>Status of Amendments</u>	1
V. <u>Summary of the Invention</u>	1
VI. <u>Grounds of Rejection</u>	7
A. <u>Ground of Rejection 1: The Anticipation Rejection Based on the Saito Patent</u>	7
B. <u>Ground of Rejection 2: The Obviousness Rejection Based on the Saito Patent</u>	7
VII. <u>Argument</u>	7
A. <u>Ground of Rejection 1: The Anticipation Rejection Based on the Saito Patent</u>	7
1. <u>Claims 1-5, 8-17, 20-29, and 32-36 are not Anticipated by the Saito Patent.</u>	7
B. <u>Ground of Rejection 2: The Obviousness Rejection Based on the Saito Patent</u> ..	18
1. <u>Claims 6, 7, 18, 19, 30, and 31 are not Obvious over the Saito Patent.</u>	18
VIII. <u>Conclusion</u>	22
IX. <u>Appendix A</u>	23

I. Real Party in Interest

The entire right, title and interest in this patent application is assigned to real party in interest International Business Machines Corporation.

II. Related Appeals, Interferences, and Judicial Proceedings

Appellant, Appellant's legal representative, and Assignee are not aware of any other prior or pending appeals, interferences, and judicial proceedings which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

III. Status of the Claims

Claims 1-36 are pending and have been rejected.

The final rejection of the claims is being appealed for all pending claims 1-36.

IV. Status of Amendments

An amendment was filed on July 19, 2004 after receipt of a Final Rejection, in which some claims were amended to place them in better form. In an Advisory Action mailed on August 23, 2004, the Examiner indicated that the amendments would be entered for purposes of appeal.

V. Summary of the Invention

The presently claimed invention is directed to generating, with a computing system, a signal when status for the job is changed from a first status to a second status in a job status table.

Each status for the job is associated with a single work process for processing the job among multiple work processes, and each status refers to a next process to be performed by the single work process associated with the status. Each work process is an application program. Also, the job status table identifies jobs on which work is performed. A user defined function uses a mapping to identify a single work process for processing the job based on the second status, wherein the second status is associated with the identified work process. With the user defined function, the work process associated with the second status is notified that one job had its status changed to the second status in response to the signal. With the work process, the job that had its status changed from the first status to the second status is processed, wherein the work process queries the job status table to identify the job having the second status which is associated with that work process and to obtain job information. With the work process, the status of the job in the job status table is modified after completing the processing of the job, wherein each work process is associated with one input status and one or more output statuses, wherein the modified status of the job is associated with another work process, and wherein the mapping may be modified to perform at least one of adding, removing, and modifying statuses associated with work processes to modify an order of the job processing.

In an additional aspect of the invention, job status is maintained in the database table including information on the job, and, with the work process, a connection with the database that enables communication with the database table is maintained. Modifying the status of the job after completing processing comprises updating the status of the job to an output status associated with another work process, and updating the status with the output status generates the signal indicating a change in status.

The work process determines whether the work process completed processing the job successfully and updates the status of the job to an error status if the work process did not complete processing the job successfully, wherein the status of the job is updated with one output status associated with the work process if the job work process completed processing the job successfully.

An error work process is associated with the error status, and updating the job to the error status causes the notification of the error work process. The error work process performs error recovery operations on the job, determines whether the error recovery operations corrected the job, and sets the jobs status of the corrected job to a first possible status in the workflow.

For example, as described in the specification in connection with one embodiment, a computing system (e.g., Specification, page 1, line 27; FIG. 1, computing system 2) generates a signal when status for the job is changed from a first status to a second status in a job status table (e.g., Specification, page 7, lines 4-13; FIG. 2). Each status for the job is associated with a single work process for processing the job among multiple work processes (e.g., Specification, page 5, lines 26-27). Each status refers to a next process to be performed by the single work process associated with the status (e.g., Specification, page 5, lines 3-5). Each work process is an application program (e.g., Specification, page 5, lines 8-9). The job status table identifies jobs on which work is performed (e.g., Specification, page 4, line 23-page 5, line 7; FIG. 2).

A user defined function uses a mapping to identify a single work process for processing the job based on the second status, wherein the second status is associated with the identified work process (e.g., Specification, page 6, line 26-page 7, line 3; page 7, lines 15-17; FIG. 3, block 122). With the user defined function, the work process associated with the second status is

notified that one job had its status changed to the second status in response to the signal (e.g., Specification, page 6, line 26-page7, line 3; page 7, lines 17-19; FIG. 3, block 124).

With the work process, the job that had its status changed from the first status to the second status is processed, wherein the work process queries the job status table to identify the job having the second status which is associated with that work process and to obtain job information (e.g., Specification, page 7, lines 19-24; FIG. 4). With the work process, the status of the job in the job status table is modified after completing the processing of the job (e.g., Specification, page 8, lines 9-12). Each work process is associated with one input status and one or more output statuses (e.g., Specification, page 5, lines 25-26). The modified status of the job is associated with another work process (i.e., the modified status is the input status of another work process) (e.g., Specification, page 10, lines 24-25). The mapping may be modified to perform at least one of adding, removing, and modifying statuses associated with work processes to modify an order of the job processing (e.g., Specification, page 12, lines 3-5).

In another aspect of the invention, the signal is transmitted to a routing process and indicates the second status, and the routing process processes the mapping associating each status with one work process in response to receiving the signal and determines from the mapping one work process associated with the second status, wherein the determined work process is notified of the job (e.g., Specification, page 2, lines 6-11; page 12, lines 12-13).

In yet another aspect of the invention, the status of a job is maintained in a database table including information on the job (e.g., Specification, page 4, lines 14-16; FIG. 1, job status table 10). With the work process, a connection with the database that enables communication with the database table is maintained (e.g., Specification, page 6, lines 3-7). Modifying the status of the

job with the work process after completing processing comprises updating the status of the job with the work process to an output status associated with another work process (e.g., Specification, page 8, lines 9-12; page 10, lines 24-25). Updating the status with the output status generates the signal indicating a change in status (e.g., Specification, page 13, lines 25-26).

In a further aspect of the invention, the signal is generated by an event trigger in the database at the computing system that responds to an update to the status of the job in the database table (e.g., Specification, page 6, lines 21-24).

In another aspect of the invention, there are multiple work processes, and each work process is enabled to update the status of a job with one associated output status after completing the processing of the job (e.g., Specification, page 8, lines 9-12; page 10, lines 24-25). The output status for one work process is the input status associated with one other work process, and the definition of input and output statuses for work processes defines the workflow of the job (e.g., Specification, page 2, lines 21-28; page 10, lines 21-27).

In yet another aspect of the invention, the work process determines whether the work process completed processing the job successfully and updates the status of the job to an error status if the work process did not complete processing the job successfully, wherein the status of the job is updated with one output status associated with the work process if the job work process completed processing the job successfully (e.g., Specification, page 11, lines 1-3; FIG. 2, block 208).

In a further aspect of the invention, an error work process is associated with the error status, and updating the job to the error status causes the notification of the error work process (e.g., Specification, page 11, lines 11-15). The error work process performs error recovery

operations on the job, determines whether the error recovery operations corrected the job, and sets the jobs status of the corrected job to a first possible status in the workflow (e.g., Specification, page 11, lines 11-15) .

In another aspect of the invention, the work process processes the jobs having the status associated with the work process, terminates processing of the database table if there are no further jobs in the database table having the status associated with the work process, and queries the database table for additional jobs after receiving the notification (e.g., Specification, page 8, line 19-11, line 6; FIGs. 4-5)

In a further aspect of the invention, the work process spawns a work thread to process one job in the database table having the status associated with the work process, wherein the work process is capable of spawning multiple work threads to process different jobs having the status associated with the work process (e.g., Specification, page 9, lines 3-13; page 10, lines 1-3).

In yet another aspect of the invention, the job comprises a data file, and at least one work process processes the data file to alter its format and at least one other work process processes the data file in the altered format to transmit the data file to an output device (e.g., Specification, page 12, lines 11-13).

In a further aspect of the invention, at least two work processes process the job at different devices in communication over a network. The job is accessed with one of the work processes from another device over the network to process the job at the device on which that work process executes.

In another aspect of the invention, with the computing system, a status update is added to a list providing status updates for each job. The list is used to determine how the job has been

processed by the work processes.

VI. Grounds of Rejection

A concise statement listing each ground of rejection presented for review is as follows:

A. Ground of Rejection 1: The Anticipation Rejection Based on the Saito Patent

Claims 1-5, 8-17, 20-29, and 32-36 stand rejected under 35 U.S.C. §102(e) as being anticipated by Saito et al. (U.S. Patent No. 6,578,006).

B. Ground of Rejection 2: The Obviousness Rejection Based on the Saito Patent

Claims 6, 7, 18, 19, 30, and 31 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Saito et al. (U.S. Patent No. 6,578,006).

VII. Argument

A. Ground of Rejection 1: The Anticipation Rejection Based on the Saito Patent

1. Claims 1-5, 8-17, 20-29, and 32-36 are not Anticipated by the Saito Patent.

As set forth above, claims 1, 13, and 25 are directed to a method, system, and article of manufacture for generating, with a computing system, a signal when status for the job is changed from a first status to a second status in a job status table, wherein each status for the job is associated with a single work process for processing the job among multiple work processes, wherein each status refers to a next process to be performed by the single work process associated with the status, wherein each work process is an application program, and wherein the job status table identifies jobs on which work is performed. A user defined function uses a

mapping to identify a single work process for processing the job based on the second status, wherein the second status is associated with the identified work process. With the user defined function, the work process associated with the second status is notified that one job had its status changed to the second status in response to the signal. With the work process, the job that had its status changed from the first status to the second status is processed, wherein the work process queries the job status table to identify the job having the second status which is associated with that work process and to obtain job information. With the work process, the status of the job in the job status table is modified after completing the processing of the job, wherein each work process is associated with one input status and one or more output statuses, wherein the modified status of the job is associated with another work process. Additionally, the mapping may be modified to perform at least one of adding, removing, and modifying statuses associated with work processes to modify an order of the job processing.

With Applicants' invention, when the status column of a job is updated in a job status table, then a trigger fires (event-driven) and executes a user defined function (e.g., FIG. 3). This user defined function accesses a mapping to see which work process should work on a job using information (e.g., job ID) in a job status table (e.g., FIG. 3). Each work process gets job information from the job status table, processes the job, and updates the status of the job in the job status table. Thus, each work process is independent of all other work processes in a workflow, and the user defined function and job status table have the information needed to process a job to completion. Moreover, work processes may be added, removed or changed by changing the mapping. This would alter the definition of which worker is invoked for a particular status.

On the other hand, the Saito patent describes that the work management method manages a project executed by individuals (Saito, Abstract). The Saito reference describes that an event management unit acquires an unprocessed event from an event queue, checks for a document in a document management database, and calls a task management unit if the document is located. (Saito, Col. 7, lines 29-44; FIG. 6) The task management unit searches a work management table for a particular row and performs different processing depending on whether the argument-specific event type is "complete event" or "start event" (Saito, Col. 7, line 64-Col. 8, line 9; FIGs. 7, 8). The task management unit then calls the task notification processing (Col. 8, lines 49-50; FIG. 10).

The task notification unit creates a notification message with a link to a document and sends a notification message to a task execution user (Saito, Col. 9, lines 45-61). Again, the Saito patent describes that the work management method manages a project executed by individuals (Saito, Abstract). The Saito patent applies to patent processing, executed by an inventor, where the inventor performs the task of writing a patent specification during a patent application work, the task of deciding whether to request an examination during a consideration of examination request, and the task of checking whether or not a patent is infringed during infringement checking (Saito, Col. 1, lines 42-50). Thus, Applicants submit that the notification message is sent to an individual to perform task processing.

Claims 1, 13, and 25 describe generating, with a computing system, a signal when status for a job is changed from a first status to a second status in a job status table, wherein each status for the job is associated with a single work process for processing the job among multiple work processes, wherein each status refers to a next process to be performed by the single work

process associated with the status, wherein each work process is an application program, and wherein the job status table identifies jobs on which work is performed. That is, each status describes a stage of processing in a work flow. For example, the status of a job may be ready, print, format, etc. (See, for example, Applicants' FIG. 2 and Specification at page 4, lines 25-27). Also, each work process that is associated with one status is an application program. (See, for example, Specification at page 5, lines 9-10). Each job identified in the job status table comprises an entity on which work is performed, such as processing data, generating output materials, forwarding data to another location for further processing, printing, working on a material or device, etc. (See, for example, Specification at page 5, lines 3-7). Thus, the job status table identifies the jobs to be processed by multiple work processes.

In the Advisory Action, the Examiner states:

Saito teaches various examples of status tables, including the task definition table depicted in FIG. 2. The Infringement Countermeasure job comprises the tasks or processes, listed in the task definition table (i.e., investigation, judgment, and countermeasures). The Input Document and Output Document columns define start and end statuses for each process. For example, the Investigation process commences with the input of an Infringement Report and terminates with the output of an Infringement Record. Once the Infringement Record is generated by the Investigation process, the Judgement process is triggered since its first status condition requires the input of the Infringement Record output by the Investigation process.

The task definition table for the Infringement Countermeasure job lists a task, an input document, an output document, and a default (Saito, FIG. 2). The input document column identifies an input document required for task execution, and an output document column identifies an output document created by task execution (Saeto, Col. 4, lines 56-59). The input and output document columns of the Saito patent do not anticipate Applicants' claimed status in the job status table because the claimed status does not indicate a document. Instead, the claimed status for the job refers to a next process to be performed by the single work process associated with the status. Also, the claimed status is associated with a single work process (i.e., application program) for processing the job among multiple work processes. The Saito patent does not teach or suggest that the input document or output document are associated with a single work process (i.e., application program).

In addition, the task column of the task definition table of the Saito patent lists tasks to be performed by individuals rather than application programs. The Saito patent describes that work to which the Saito patent is applied is a project to be executed by individuals or groups belonging to organizations, and work includes tasks executed by a specific individual or by a plurality of members (Saeto, Col. 1, lines 31-40), rather than being executed by work processes (i.e., application programs). Moreover, the Saito patent does not indicate that the tasks are associated with a single work process, and so the listing of tasks does not anticipate the claimed status that is associated with a single work process for processing the job among multiple work processes.

In the Saeto patent, a work management table includes a task status column that can take on one of three values, wait, execute, and complete (Saeto, Col. 5, lines 38-41; FIG. 3). Because the task status can only take on one of these three values, the task status does not anticipate the

claimed status that refers to a next process to be performed by the single work process associated with the status. Also, the task status is upated by the task management unit, rather than by a work process that has completed processing a job. For example, if an event type is "complete event", the task management unit sets "complete" in the task column of the searched row, and, if the event type is "start event", the task management unit sets "execute" in the task column of the searched row (Saito, Col. 5, lines 38-41; Col., 8, lines 11-20, 30-33). Moreover, the Saito patent does not indicate that a task status is associated with a single work process, and so the task status does not anticipate the claimed status that is associated with a single work process for processing the job among multiple work processes.

Furthermore, the claimed invention describes jobs processed by work processes (i.e., application programs), which is not anticipated by the Saito patent's description of a work management method and system which manages a project *executed by individuals* (Saito, Abstract). While the Examiner submits that the Saito patent utilizes a computer system to manage projects executed by humans (Saito, Abstract), the Examiner also submits that the claimed invention describing jobs done by work processes that are application programs does not preclude any human intervention with the work processes. Looking to Applicants' claim language, Applicants submit that the claimed invention is directed to use of the claimed application programs, a user defined function, and the job status table to provide a database event driven system to *automatically* route a job through a series of operations or workflow to process a job (e.g., Specification, page 11, lines 7-9). In particular, unlike the Saito patent, the claimed invention does not require human intervention to process a job because the work processes (i.e., application programs) are able to receive notifications from the user defined function that a status

has changed in the job status table, to determine whether jobs are ready for processing, and to process the job.

The Examiner also submits that computerized monitoring of the status of each task and process itself represents a work process that is an application program and that monitoring of the status of a document in the Saito patent requires that the document be electronically linked to relevant tasks and processes, thereby indicating that the document is processed electronically at some stage. The Saito patent describes that work to which the Saito patent is applied is a project to be executed by individuals or groups belonging to organizations, and work includes tasks executed by a specific individual or by a plurality of members (Saito, Col. 1, lines 31-40). The Saito patent requires an input document and an output document for each task. These documents are created by individuals. Therefore, in the Saito patent, human intervention is required to complete a job. Applicants submit that even if some portion of the processing of the Saito patent is computerized, the requirement of human intervention by the Saito patent does not anticipate, and, in fact, teaches away from the claimed automated system in which work processes (i.e., application programs) process jobs.

In addition, claims 1, 13, and 25 describe identifying a mapping, with a user defined function, a single work process for processing the job based on the second status, wherein the second status is associated with the identified work process. The Saito patent does not mention that a status is associated with a single work process. In the Saito patent, an inventor performs the task of writing a patent specification during a patent application work, the task of deciding whether to request an examination during a consideration of examination request, and the task of checking whether or not a patent is infringed during infringement checking. Thus, tasks are

associated with a human individual rather than an application program. Also, the inventor of the Saito patent performs all tasks of a patent process, which does not anticipate, that a single work process processes a job based on its status.

Claims 1, 13, and 25 also describe notifying, with the user defined function, the work process associated with the second status that one job had its status changed to the second status in response to the signal. First, the Saito patent describes notifying a user, which does not anticipate notifying a work process (application program). Second, the Saito patent describes a notification message with a link to a document, which is different from and does not anticipate sending a notification that a job had its status changed, which causes the work process to query the job status table to identify the job having the second status which is associated with that work process and to obtain job information. The Examiner submits that various tasks in the Saito patent are controlled at the level of the automated workflow management unit, and, even if there is human intervention in performance of tasks, there must be some level of electronic processing and notification. Even if there is some level of electronic processing, the requirement of human intervention to perform tasks does not anticipate, and teaches away from, the claimed automated system in which work processes (i.e., application programs) process jobs.

Claims 1, 13, and 25 describe processing, with the work process, the job that had its status changed from the first status to the second status, wherein the work process queries the job status table to identify the job having the second status which is associated with that work process and to obtain job information. On the other hand, the Saito patent describes that a user processes tasks, rather than a work process. Also, the Saito patent does not describe that the user queries any tables to identify a task and to obtain task information.

Claims 1, 13, and 25 describes modifying, with the work process, the status of the job in the job status table after completing the processing of the job, wherein each work process is associated with one input status and one or more output statuses (e.g., see Applicants' Specification at page 5, lines 25-26), wherein the modified status of the job is associated with another work process, and wherein the mapping may be modified to perform at least one of adding, removing, and modifying statuses associated with work processes to modify an order of the job processing (e.g., see Applicants' Specification at page 12, lines 3-5). Again, in the Saito patent, the user performs tasks, but the user does not change a status of a task. Instead, the Saito patent describes that a task management unit changes an event type to "complete" or "execute" in a task status column. Also, the Saito patent does not describe that the user who performs tasks is associated with one input and one or more output statuses - instead the inventor of the Saito patent example performs all tasks. The Saito patent also does not describe the claimed mapping which may be modified to perform at least one of adding, removing, and modifying statuses associated with work processes to modify an order of the job processing.

The law is clear that a claim is anticipated "only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. V. Union Oil Co. of California*, 2 U.S.P.Q. 2d 1051, 1053 (Fed. Cir. 1987). In that the Examiner has failed to cite any express description or provide support for any inherent description in the Saito patent for generating, with a computing system, a signal when status for the job is changed from a first status to a second status in a job status table, wherein each status for the job is associated with a single work process for processing the job among multiple work processes, wherein each status refers to a next process to be performed by the single work

process associated with the status, wherein each work process is an application program, and wherein the job status table identifies jobs on which work is performed; identifying using a mapping, with a user defined function, a single work process for processing the job based on the second status, wherein the second status is associated with the identified work process; notifying, with the user defined function, the work process associated with the second status that one job had its status changed to the second status in response to the signal; processing, with the work process, the job that had its status changed from the first status to the second status, wherein the work process queries the job status table to identify the job having the second status which is associated with that work process and to obtain job information; and modifying, with the work process, the status of the job in the job status table after completing the processing of the job, wherein each work process is associated with one input status and one or more output statuses, wherein the modified status of the job is associated with another work process, and wherein the mapping may be modified to perform at least one of adding, removing, and modifying statuses associated with work processes to modify an order of the job processing, it is clear that the rejection of claims 1, 13, and 25 as anticipated by the Saito patent should be reversed.

Moreover, dependent claims 2-5, 8-12, 14-17, 20-24, 26-30, and 32-36 incorporate the language of claims 1, 13, and 25 and add additional novel elements. Therefore, dependent claims 2-5, 8-12, 14-17, 20-24, 26-30, and 32-36 are not anticipated by the Saito patent for at least the same reasons as were discussed with respect to claims 1, 13, and 25.

Also, the Office Action indicates that for claim 10, FIG. 5 and Col. 7, lines 21-25 of the Saito patent teach that a document is input in one format and is later used to output a document in another format. Claim 10 describes that the job comprises a data file, wherein at least one

work process processes the data file to alter its format and at least one other work process processes the data file in the altered format to transmit the data file to an output device. The cited portion of the Saito patent at Col. 7, lines 21-25 states as follows:

In the document link list field 550 of this embodiment, the document links are divided into two types of link: a link to the document 181 required for task execution and a link to the document form 182 of the document 181 created as a result of task execution.

Applicants submit that the cited portion of the Saito patent does not describe that tasks are performed by work processes, but by users. Moreover, applicants submit that the description of links does not show that a data file is altered by one work process and transmitted to an output device by another work process. The Examiner indicates that Applicants provide no support for this assertion. However, it is unclear to Applicants how the cited portion of the Saito patent may be interpreted to anticipate that the job comprises a data file, wherein at least one work process processes the data file to alter its format and at least one other work process processes the data file in the altered format to transmit the data file to an output device.

Accordingly, it is respectfully submitted that the rejection of claims 1-5, 8-17, 20-29, and 32-36 as anticipated by the Saito patent should be reversed.

B. Ground of Rejection 2: The Obviousness Rejection Based on the Saito Patent

1. Claims 6, 7, 18, 19, 30, and 31 are not Obvious over the Saito Patent

Claims 7, 19, and 31 are directed to a method, system, and article of manufacture for generating, with a computing system, a signal when status for the job is changed from a first status to a second status in a job status table, wherein each status for the job is associated with a single work process for processing the job among multiple work processes, wherein each status refers to a next process to be performed by the single work process associated with the status, wherein each work process is an application program, and wherein the job status table identifies jobs on which work is performed. A user defined function uses a mapping to identify a single work process for processing the job based on the second status, wherein the second status is associated with the identified work process. With the user defined function, the work process associated with the second status is notified that one job had its status changed to the second status in response to the signal. With the work process, the job that had its status changed from the first status to the second status is processed, wherein the work process queries the job status table to identify the job having the second status which is associated with that work process and to obtain job information. With the work process, the status of the job in the job status table is modified after completing the processing of the job, wherein each work process is associated with one input status and one or more output statuses, wherein the modified status of the job is associated with another work process, and wherein the mapping may be modified to perform at least one of adding, removing, and modifying statuses associated with work processes to modify an order of the job processing.

Job status is maintained in the database table including information on the job, and, with

the work process, a connection with the database that enables communication with the database table is maintained. Modifying the status of the job after completing processing comprises updating the status of the job to an output status associated with another work process, and updating the status with the output status generates the signal indicating a change in status.

The work process determines whether the work process completed processing the job successfully and updates the status of the job to an error status if the work process did not complete processing the job successfully, wherein the status of the job is updated with one output status associated with the work process if the job work process completed processing the job successfully.

An error work process is associated with the error status, and updating the job to the error status causes the notification of the error work process. The error work process performs error recovery operations on the job, determines whether the error recovery operations corrected the job, and sets the jobs status of the corrected job to a first possible status in the workflow.

The Examiner indicates that the Saito patent does not expressly teach what occurs when an error status is detected. The Examiner takes Official Notice that it is well-known in the art of workflow processing to monitor for error conditions and make corrections accordingly, and the Examiner asserts that it would have been obvious to enhance Saito's invention to detect error conditions and correct these errors accordingly. Applicants traverse.

In particular, Applicants' claimed error processing technique is part of the claimed invention that includes generating a signal, with a computing system, when status for the job is changed from a first status to a second status in a database table, wherein each status for the job is associated with a single work process for processing the job among multiple work processes,

wherein each status refers to a next process to be performed by the single work process associated with the status, wherein each work process is an application program, and wherein the database table identifies jobs on which work is performed; identifying using a mapping, with a user defined function, a single work process for processing the job based on the second status, wherein the second status is associated with the identified work process; notifying, with the user defined function, the work process associated with the second status that one job had its status changed to the second status in response to the signal; processing, with the work process, the job that had its status changed from the first status to the second status, wherein the work process queries the database table to identify the job having the second status which is associated with that work process and to obtain job information; and modifying, with the work process, the status of the job in the database table after completing the processing of the job, wherein each work process is associated with one input status and one or more output statuses, wherein the modified status of the job is associated with another work process, and wherein the mapping may be modified to perform at least one of adding, removing, and modifying statuses associated with work processes to modify an order of the job processing.

Applicants submit that the Saito patent teaches away from Applicants claimed invention. For example, by teaching that a user performs tasks, rather than a work process (application program), the Saito patent teaches away from the subject matter of claims 7, 19, and 31. Also, by using multiple tables, rather than a single job status table, the Saito patent teaches away from the subject matter of claims 7, 19, and 31. Moreover, the Saito patent describes that a user is sent a task notification with a link to a document and the user may then process the document, which teaches away from a work process querying the job status table to identify the job having the

second status which is associated with that work process and to obtain job information. In the Saito patent, there is no need for the user to query a table for information. In the Saito patent, the user performs tasks, but the user does not change a status of a task. Instead, the Saito patent describes that a task management unit changes an event type to "complete" or "execute" in a task status column, which teaches away from the claimed work process modifying the status of a job.

Thus, claims 7, 19, and 31 are not taught or suggested by the Saito patent for at least the same reasons as were discussed with respect to claims 7, 19, and 31.

Claims 1, 13, and 25 are not taught or suggested by the Saito patent for at least the same reasons as were discussed with respect to claims 7, 19, and 31.

Claims 6, 18, and 19 are directed to the work process determining, with the computing system, whether the work process completed processing the job successfully, and updating, with the computing system, the status of the job to an error status if the work process did not complete processing the job successfully, wherein the status of the job is updated with one output status associated with the work process if the job work process completed processing the job successfully.

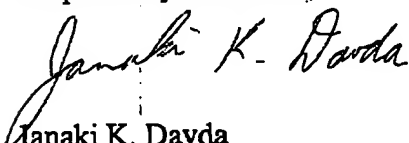
Dependent claims 6, 18, and 30 incorporate the language of independent claims 1, 13, and 25, respectively, and add additional novel elements. Therefore, dependent claims 6, 18, and 30 are not taught or suggested by the Saito patent for at least the reasons discussed with respect to independent claims 1, 13, and 25.

Accordingly, it is respectfully submitted that the rejection of claims 6, 7, 18, 19, 30, and 31 as obvious over the Saito patent should be reversed.

VIII. Conclusion

Each of the rejections set forth in the final Office Action is improper and should be reversed.

Respectfully submitted,



Janaki K. Davda
Reg. No. 40,684

Dated: November 8, 2004

Direct All Correspondence to:
David Victor
Konrad Raynes & Victor LLP
315 South Beverly Drive, Ste. 210
Beverly Hills, California 90212
Tel: 310-553-7977
Fax: 310-556-7984

IX. Appendix A

The claims on appeal are as follows:

1. (Previously Presented) A method for processing a job, comprising:
generating, with a computing system, a signal when status for the job is changed from a first status to a second status in a job status table, wherein each status for the job is associated with a single work process for processing the job among multiple work processes, wherein each status refers to a next process to be performed by the single work process associated with the status; wherein each work process is an application program, and wherein the job status table identifies jobs on which work is performed;
identifying using a mapping, with a user defined function, a single work process for processing the job based on the second status, wherein the second status is associated with the identified work process;
notifying, with the user defined function, the work process associated with the second status that one job had its status changed to the second status in response to the signal;
processing, with the work process, the job that had its status changed from the first status to the second status, wherein the work process queries the job status table to identify the job having the second status which is associated with that work process and to obtain job information; and
modifying, with the work process, the status of the job in the job status table after completing the processing of the job, wherein each work process is associated with one input status and one or more output statuses, wherein the modified status of the job is associated with another work process, and wherein the mapping may be modified to perform at least one of

adding, removing, and modifying statuses associated with work processes to modify an order of the job processing.

2. (Previously Presented) The method of claim 1, wherein the signal is transmitted to a routing process and indicates the second status, further comprising:
processing with the routing process the mapping associating each status with one work process in response to receiving the signal; and
determining from the mapping one work process associated with the second status,
wherein the determined work process is notified of the job.

3. (Previously Presented) The method of claim 1, wherein job status is maintained in a database table including information on the job, further comprising maintaining, with the work process, a connection with the database that enables communication with the database table, wherein modifying the status of the job with the work process after completing processing comprises updating the status of the job with the work process to an output status associated with another work process, and wherein updating the status with the output status generates the signal indicating a change in status.

4. (Previously Presented) The method of claim 3, wherein the signal is generated by an event trigger in the database at the computing system that responds to an update to the status of the job in the database table.

5. (Previously Presented) The method of claim 3, wherein there are multiple work processes, wherein each work process is enabled to update the job status with one associated output status after completing the processing of the job, wherein the output status for one work process is the input status associated with one other work process, and wherein the definition of input and output statuses for work processes, defines the workflow of the job.

6. (Previously Presented) The method of claim 3, further comprising the work process performing:

determining, with the computing system, whether the work process completed processing the job successfully; and

updating, with the computing system, the status of the job to an error status if the work process did not complete processing the job successfully, wherein the status of the job is updated with one output status associated with the work process if the job work process completed processing the job successfully.

7. (Previously Presented) A method for processing a job, comprising;

generating a signal, with a computing system, when status for the job is changed from a first status to a second status in a database table, wherein each status for the job is associated with a single work process for processing the job among multiple work processes, wherein each status refers to a next process to be performed by the single work process associated with the status, wherein each work process is an application program, and wherein the database table identifies jobs on which work is performed;

identifying using a mapping, with a user defined function, a single work process for processing the job based on the second status, wherein the second status is associated with the identified work process;

notifying, with the user defined function, the work process associated with the second status that one job had its status changed to the second status in response to the signal;

processing, with the work process, the job that had its status changed from the first status to the second status, wherein the work process queries the database table to identify the job having the second status which is associated with that work process and to obtain job information;

modifying, with the work process, the status of the job in the database table after completing the processing of the job, wherein each work process is associated with one input status and one or more output statuses, wherein the modified status of the job is associated with another work process, and wherein the mapping may be modified to perform at least one of adding, removing, and modifying statuses associated with work processes to modify an order of the job processing;

wherein job status is maintained in the database table including information on the job and maintaining, with the work process, a connection with the database that enables communication with the database table, wherein modifying the status of the job after completing processing comprises updating the status of the job to an output status associated with another work process, and wherein updating the status with the output status generates the signal indicating a change in status;

wherein the work process further comprises performing:

determining whether the work process completed processing the job successfully;

and

updating the status of the job to an error status if the work process did not complete processing the job successfully, wherein the status of the job is updated with one output status-associated with the work process if the job work process completed processing the job successfully; and

wherein an error work process is associated with the error status, wherein updating the job to the error status causes the notification of the error work process, and wherein the error work process further comprises performing:

performing error recovery operations on the job;

determining whether the error recovery operations corrected the job; and

setting the jobs status of the corrected job to a first possible status in the workflow.

8. (Previously Presented) The method of claim 3, wherein the work process further performs;

processing the jobs having the status associated with the work process;

terminating processing of the database table if there are no further jobs in the database table having the status associated with the work process; and

querying the database table for additional jobs after receiving the notification.

9. (Previously Presented) The method of claim 8, wherein the work process spawns a work thread to process one job in the database table having the status associated with the work

process, wherein the work process is capable of spawning multiple work threads to process different jobs having the status associated with the work process.

10. (Previously Presented) The method of claim 1, wherein the job comprises a data file, wherein at least one work process processes the data file to alter its format and at least one other work process processes the data file in the altered format to transmit the data file to an output device.

11. (Previously Presented) The method of claim 10, wherein at least two work processes process the job at different devices in communication over a network, further comprising accessing the job, with one of the work processes, from another device over the network to process the job at the device on which that work process executes.

12. (Previously Presented) The method of claim 1, further comprising:
adding, with the computing system, a status update to a list providing status updates for each job; and
using the list to determine how the job has been processed by the work processes.

13. (Previously Presented) A system for processing a job, comprising;
means for generating, with a computing system, a signal when status for the job is changed from a first status to a second status in a job status table, wherein each status for the job is associated with a single work process for processing the job among multiple work processes,

wherein each status refers to a next process to be performed by the single work process associated with the status, and wherein each work process is an application program, and wherein the job status table identifies jobs on which work is performed;

means for identifying using a mapping, with a user defined function, a single work process for processing the job based on the second status, wherein the second status is associated with the identified work process;

means for notifying, with the user defined function, the work process associated with the second status that one job had its status changed to the second status in response to the signal;

means for processing, with the work process, the job that had its status changed from the first status to the second status, wherein the work process queries the job status table to identify the job having the second status which is associated with that work process and to obtain job information; and

means for modifying, with the work process, the status of the job in the job status table after completing the processing of the job, wherein each work process is associated with one input status and one or more output statuses, wherein the modified status of the job is associated with another work process, and wherein the mapping may be modified to perform at least one of adding, removing, and modifying statuses associated with work processes to modify an order of the job processing.

14. (Previously Presented) The system of claim 13, wherein the signal is transmitted to a routing process and indicates the second status, further comprising:

means for processing with the routing process the mapping associating each status with

one work process in response to receiving the signal; and

mean for determining from the mapping one work process associated with the second status, wherein the determined work process is notified of the job.

15. (Previously Presented) The system of claim 13, wherein job status is maintained in a database table including information on the job, further comprising means for maintaining, with the work process, a connection with the database that enables communication with the database table, wherein the means for modifying the status of the job, with the work process, after completing processing comprises updating the status of the job to an output status associated with another work process, and wherein the means for updating, with the work process, the status with the output status generates the signal indicating a change in status.

16. (Original) The system of claim 15, wherein the signal is generated by an event trigger in the database that responds to an update to the status of the job in the database table.

17. (Previously Presented) The system of claim 15, wherein there are multiple work processes, wherein each work process is enabled to update the job status with one associated output status after completing the processing of the job, wherein the output status for one work process is the input status associated with one other work process, and wherein the definition of input and output statuses for work processes defines the workflow of the job.

18. (Previously Presented) The system of claim 15, further comprising:

means for determining, with the computing system, whether the work process completed processing the job successfully; and

means for updating the status of the job to an error status if the work process did not complete processing the job successfully, wherein the status of the job is updated with one output status associated with the work process if the job work process completed processing the job successfully.

19. (Previously Presented) A system for processing a job, comprising;

means for generating, with a computing system, a signal when status for the job is changed from a first status to a second status in a database table, wherein each status for the job is associated with a single work process for processing the job among multiple work processes, wherein each status refers to a next process to be performed by the single work process associated with the status, wherein each work process is an application program, and wherein the database table identifies jobs on which work is performed;

means for identifying using a mapping, with a user defined function, a single work process for processing the job based on the second status, wherein the second status is associated with the identified work process;

means for notifying, with the user defined function, the work process associated with the second status that one job had its status changed to the second status in response to the signal;

means for processing, with the work process, the job that had its status changed from the first status to the second status, wherein the work process queries the database table to identify the job having the second status which is associated with that work process and to obtain job

information;

means for modifying, with the work process, the status of the job in the database table after completing the processing of the job, wherein each work process is associated with one input status and one or more output statuses, wherein the modified status of the job is associated with another work process, and wherein the mapping may be modified to perform at least one of adding, removing, and modifying statuses associated with work processes to modify an order of the job processing;

wherein job status is maintained in the database table including information on the job, further comprising means for maintaining, with the work process, a connection with the database that enables communication with the database table, wherein the means for modifying the status of the job after completing processing comprises updating the status of the job to an output status associated with another work process, and wherein the means for updating the status with the output status generates the signal indicating a change in status;

means for determining whether the work process completed processing the job successfully;

means for updating the status of the job to an error status if the work process did not complete processing the job successfully, wherein the status of the job is updated with one output status associated with the work process if the job work process completed processing the job successfully; and

wherein an error process is associated with the error status, wherein updating the job to the error status causes the notification of the error work process, further comprising:

means for performing error recovery operations on the job;

means for determining whether the error recovery operations corrected the job; and
means for setting the jobs status of the corrected job to a first possible status in the
workflow.

20. (Previously Presented) The system of claim 15, further comprising:
means for querying the database table for jobs having the status associated with the work
process;
means for processing the jobs having the status associated with the work process;
means for terminating processing of the database table if there are no further jobs in the
database table having the status associated with the work process; and
means for querying the database table for additional jobs after receiving the notification.

21. (Previously Presented) The system of claim 20, wherein the work process spawns
a work thread to process one job in the database table having the status associated with the work
process, and wherein the work process is capable of spawning multiple work threads to process
different jobs having the status associated with the work process.

22. (Previously Presented) The system of claim 13, wherein the job comprises a data
file, wherein at least one work process processes the data file to alter its format and at least one
other work process processes the data file in the altered format to transmit the data file to an
output device.

23. (Previously Presented) The system of claim 22, wherein at least two work processes process the job at different devices in communication over a network, further comprising means for accessing the job from another device over the network to process the job at the device on which that work process executes.

24. (Original) The system of claim 13, further comprising:
means for adding a status update to a list providing status updates for each job; and
means for using the list to determine how the job has been processed by the work processes.

25. (Previously Presented) An article of manufacture for processing a job, the article of manufacture comprising computer usable media including at least one computer program and at least one work process embedded therein that causes at least one computer to perform:
generating a signal when status for the job is changed from a first status to a second status in a job status table, wherein each status for the job is associated with a single work process for processing the job among multiple work processes, wherein each status refers to a next process to be performed by the single work process associated with the status, wherein each work process is an application program, and wherein the job status table identifies jobs on which work is performed;

identifying using a mapping a single work process for processing the job based on the second status, wherein the second status is associated with the identified work process;
notifying the work process associated with the second status that one job had its status

changed to the second status in response to the signal;

processing, with the work process, the job that had its status changed from the first status to the second status, wherein the work process queries the job status table to identify the job having the second status which is associated with that work process and to obtain job information; and

modifying, with the work process, the status of the job in the job status table after completing the processing of the job, wherein each work process is associated with one input status and one or more output statuses, wherein the modified status of the job is associated with another work process, and wherein the mapping may be modified to perform at least one of adding, removing, and modifying statuses associated with work processes to modify an order of the job processing.

26. (Previously Presented) The article of manufacture of claim 25, wherein the signal is transmitted to a routing process and indicates the second status, further comprising:

processing with the routing process the mapping associating each status with one work process in response to receiving the signal; and

determining from the mapping one work process associated with the second status, wherein the determined work process is notified of the job.

27. (Previously presented) The article of manufacture of claim 25, wherein job status is maintained in a database table including information on the job, further comprising maintaining, with the work process, a connection with the database that enables communication

with the database table, wherein modifying the status of the job after completing processing comprises updating the status of the job to an output status associated with another work process, and wherein updating the status with the output status generates the signal indicating a change in status.

28. (Previously presented) The article of manufacture of claim 27, wherein the signal is generated by an event trigger in the database that responds to an update to the status of the job in the database table.

29. (Previously Presented) The article of manufacture of claim 27, wherein there are multiple work processes, wherein each work process is enabled to update the job status with one associated output status after completing the processing of the job, wherein the output status for one work process is the input status associated with one other work process, and wherein the definition of input and output statuses for work processes defines the workflow of the job.

30. (Previously presented) The article of manufacture of claim 27, further comprising the work process performing:

determining whether the work process completed processing the job successfully; and
updating the status of the job to an error status if the work process did not complete processing the job successfully, wherein the status of the job is updated with one output status associated with the work process if the job work process completed processing the job successfully.

31. (Previously Presented) An article of manufacture for processing a job, the article of manufacture comprising computer usable media including at least one computer program and at least one work process embedded therein that causes at least one computer to perform:

generating a signal when status for the job is changed from a first status to a second status in a database table, wherein each status for the job is associated with a single work process for processing the job among multiple work processes, wherein each status refers to a next process to be performed by the single work process associated with the status, wherein each work process is an application program, and wherein the database table identifies jobs on which work is performed;

identifying using a mapping a single work process for processing the job based on the second status, wherein the second status is associated with the identified work process;

notifying the work process associated with the second status that one job had its status changed to the second status in response to the signal;

processing, with the work process, the job that had its status changed from the first status to the second status, wherein the work process queries the database table to identify the job having the second status which is associated with that work process and to obtain job information;

modifying, with the work process, the status of the job in the database table after completing the processing of the job, wherein each work process is associated with one input status and one or more output statuses, wherein the modified status of the job is associated with another work process, and wherein the mapping may be modified to perform at least one of adding, removing, and modifying statuses associated with work processes to modify an order of

the job processing;

wherein job status is maintained in the database table including information on the job, further comprising maintaining, with the work process, a connection with the database that enables communication with the database table, wherein modifying the status of the job after completing processing comprises updating the status of the job to an output status associated with another work process, and wherein updating the status with the output status generates the signal indicating a change in status;

wherein the work process further comprises performing:

determining whether the work process completed processing the job successfully;

and

updating the status of the job to an error status if the work process did not complete processing the job successfully, wherein the status of the job is updated with one output status associated with the work process if the job work process completed processing the job successfully; and

wherein one work process is an error work process is associated with the error status, wherein updating the job to the error status causes the notification of the error work process, wherein the error work process further comprises performing:

performing error recovery operations on the job;

determining whether the error recovery operations corrected the job; and

setting the jobs status of the corrected job to a first possible status in the workflow.

32. (Previously Presented) The article of manufacture of claim 27, wherein the work

process further performs:

- querying the database table for jobs having the status associated with the work process;
- processing the jobs having the status associated with the work process;
- terminating processing of the database table if there are no further jobs in the database table having the status associated with the work process; and
- querying the database table for additional jobs after receiving the notification.

33. (Previously presented) The article of manufacture of claim 32, wherein the work process spawns a work thread to process one job in the database table having the status associated with the work process, wherein the work process is capable of spawning multiple work threads to process different jobs having the status associated with the work process.

34. (Previously Presented) The article of manufacture of claim 25, wherein the job comprises a data file, wherein at least one work process processes the data file to alter its format and at least one other work process processes the data file in the altered format to transmit the data file to an output device.

35. (Previously presented) The article of manufacture of claim 34, wherein at least two work processes process the job at different devices in communication over a network, further comprising accessing the job from another device over the network to process the job at the device on which that work processes executes.

36. (Previously presented) The article of manufacture of claim 25, further comprising:
adding a status update to a list providing status updates for each job; and
using the list to determine how the job has been processed by the work processes.